

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Robert Holthus (Reg. No. 50,347) on June 13, 2008.

The application has been amended as follows:

*In the Specification:*

Replace the existing abstract with:

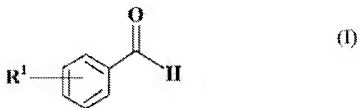
--A solvent-free epoxy resin matrix composition comprising: (a) a liquid epoxy resin or a liquid mixture of epoxy resins, (b) a benzyldienamine compound, (c) an aliphatic or cycloaliphatic primary monoamine and/or disecndary diamine; and (d) a catalytically curing tertiary amine. The epoxy resin matrix composition is used as an impregnating resin to form impregnated fiber composite materials.--

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In the Claims:

1. (Currently amended) A fibre composite impregnated with a curable, solvent-free epoxy resin matrix composition, said composition comprising:

- (a) a liquid epoxy resin or a liquid mixture of epoxy resins,
- (b) a benzylidenamine compound obtained by reacting a benzaldehyde of the formula (I)



in which R<sup>1</sup> is hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl or C<sub>1</sub>-C<sub>5</sub> alkoxy, with a primary amine,

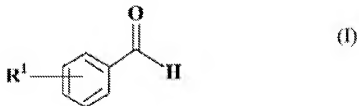
- (c) an aliphatic or cycloaliphatic primary monoamine and/or dissecondary diamine, and
- (d) a catalytically curing tertiary amine,

the curable epoxy resin matrix composition containing from 0.15 to 0.8 amine hydrogen equivalent of the amine component (c) and from 0.01 to 0.1 mol of the tertiary amine (d) per epoxide equivalent of the epoxy resin (a).

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9. (Currently amended) A solvent-free epoxy resin matrix composition comprising:

- (a) a liquid epoxy resin or a liquid mixture of epoxy resins,
- (b) a benzylidenamine compound obtained by reacting a benzaldehyde of the formula (I)



in which R<sup>1</sup> is hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl or C<sub>1</sub>-C<sub>5</sub> alkoxy with a primary amine,

(c) an aliphatic or cycloaliphatic primary monoamine and/or disecndary diamine, and

(d) a catalytically curing tertiary amine.

the curable epoxy resin matrix composition containing from 0.15 to 0.8 amine hydrogen equivalent of the amine component (c) and from 0.01 to 0.1 mol of the tertiary amine (d) per epoxide equivalent of the epoxy resin (a).

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## DETAILED ACTION

### *Pending Claims*

Claims 1-6, 9, and 10 are pending.

### *Summary of the Examiner's Amendment*

1. The following is a summary of the changes:
  - The Abstract has been amended to be more substantive than the current Abstract.  
The new Abstract mentions all of the essential materials of the instant invention.
  - Claim 1 has been modified to enhance clarity (*addition of the word "composition"*).  
This is not a substantive change.
  - Claim 9 has been altered as follows:
    - The list of ingredients has been formatted to mirror the format of claim 1;
    - The claim has been modified to enhance clarity (*addition of the word "composition"*). This is not a substantive change;
    - The term "solvent-free" has been added because this appears to be an essential feature of the instant invention – *see: claim 1; bottom of page 1 of the specification; and bottom of page 5 of the specification;*
    - The relative amounts of (a), (c), and (d) have been added because these amounts appear to be an essential feature of the instant invention – *see: claim 1; top of page 2 of the specification; and preferable amounts set forth on page 4 of the specification.*

***Response to Amendment***

2. The rejection of claims 1-6, 9, and 10 under 35 U.S.C. 112, second paragraph, has been overcome by amendment.
3. The rejection of claims 1-4, 6, 9, and 10 under 35 U.S.C. 103(a) as being unpatentable over Gruber (US Pat. No. 4,608,300) in view of Zondler et al. (US Pat. No. 4,163,098) has been overcome by amendment.

***Allowable Subject Matter***

4. Claims 1-6, 9, and 10 are allowed.
5. The following is an examiner's statement of reasons for allowance:

Gruber (US Pat. No. 4,608,300 & EP 0133154 A) disclose an epoxy resin composition containing: an epoxy resin corresponding to instantly claimed component (a); and a hardener featuring a combination of materials corresponding to instantly claimed components (c) and (d). Aoki et al. (JP 04-202420) disclose an epoxy resin composition containing: an epoxy resin corresponding to instantly claimed component (a); and a hardener corresponding to instantly claimed component (b).

It has been found that *in the absence of unexpected results*, "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art," – *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

However, Applicant does indeed provide unexpected results in the Table set forth on page 10 of the Specification. When *minor amounts* of component (b) are used in concert with components (c) and (d), the pot life of the composition is dramatically altered (*as indicated by the viscosity measurement taken after 30 minutes at 60°C*). The minor amounts of component (b) have a stabilizing/inhibiting effect that slows down the cross-linking reaction of the overall composition, yielding vastly improved pot life. When compared to the use of (c) and (d) alone, incorporation of minor amounts (0.3%) of component (b) reduces this viscosity indicator by more than half. The effect is even more dramatic when component (b) is incorporated in amounts of 1.5% and 4.8%. Therefore, the instant invention is patentable over the prior art, in light of these unexpected results.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

*Communication*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is (571)272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J Feely/  
Primary Examiner, Art Unit 1796

June 16, 2008